

AUG 26 1991

593



August 22, 1991

Mr. Tony Cairns
Champlain Oil Company
P.O. Box 2126
South Burlington, VT 05407

RE: Fairgrounds Beverage

Dear Mr. Cairns:

Griffin International has collected the information regarding subsurface petroleum contamination at the Fairgrounds Beverage, which was requested of you by the State of Vermont Department of Environmental Conservation (DEC), in a letter to you dated April 10, 1990. Enclosed, please find results of laboratory analyses performed on groundwater samples collected from the site on July 19, 1990. Please note that MW-4 is a QA/QC duplicate of MW-3. Also enclosed is liquid level data and a Groundwater Contour Map for the site. Water table elevations listed on the map are relative to the top of casing of MW-2, to which we assigned an arbitrary elevation of 100 feet.

Water samples were collected from three of the four original wells which were installed in the backfill for the newly installed underground storage tanks. One of the wells, MW-4, has been broken at a depth of approximately three feet below grade, preventing the collection of a water sample from it. The water samples were analyzed for BTEX and MTBE by EPA Method 602. The results of the analyses indicate that the three wells contained detectable concentrations of ethylbenzene. Concentrations of this compound in one of the three wells, MW-2, were above State of Vermont Preventative Action Limits (PAL) of 340 ppb. In addition, two of the three wells, MW-1 and MW-2, contained xylenes. MW-2 contained concentrations of these compounds exceeding the PAL of 200 ppb.

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The Groundwater Contour Map for this site indicates that the water table is sloping to the southwest at a 1% gradient. Griffin was not present when the tanks were installed so we don't know exactly what type of soils are in the vicinity of the tank pit. Based on our experience with other subsurface investigations in the area and a general understanding of the surficial geology in the area, we are assuming that the soils consist of fine to medium, silty sand. With a groundwater gradient of 1%, we estimate groundwater flow rates in the area to be low to moderate.

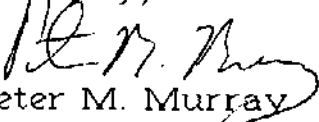
We were not able to locate exact design specifications for the monitoring wells, however, we can safely assume that the wells are screened from the bottom of the well to approximately one foot below the top of casing. There are likely no bentonite seals above the screened sections of the wells, however, the eight inch diameter manhole covers are surrounded by concrete. The concrete is likely preventing surface runoff from entering the wells. The wells are four inch diameter, PVC. MW-1 is 9.55 feet deep, MW-2 is 9.71 feet deep and MW-3 is 9.15 feet deep. It is not known exactly how deep MW-4 originally was due to the blockage caused by the broken PVC. It is also not known how the well was broken.

In conclusion, although one of the three monitoring wells contains concentrations of ethylbenzene above the PAL, and two of the wells contain concentrations of xylenes above the PAL, these concentrations are still relatively low. Since all homes and businesses in the area are served by the municipal water district and there are no known sensitive receptors within approximately one half mile of the site, we recommend that no active remediation of this site is necessary at this time. We do, however, recommend that the three wells be sampled in six months for analysis by EPA Method 602. Since the likely source of the contamination, the former tanks, have been removed, contamination concentrations should be reduced by then. If the concentrations are below the PAL's in the next round of samples, we would recommend, at that point, that no additional monitoring of the site is necessary.

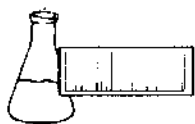
Tony Cairns
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August 22, 1991

Please call me with any questions which you may have regarding this site.

Sincerely,


Peter M. Murray
Project Hydrogeologist

cc: Bob Haslam



ENDYNE, INC.

RECEIVED AUG 08 1991

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Fairground Beverage
REPORT DATE: August 5, 1991 ANALYSIS DATE: July 29, 1991
SAMPLER: Don Tourangeau STATION: Trip Blank
DATE SAMPLED: July 19, 1991 REF.#: 21725
DATE RECEIVED: July 19, 1991 TIME SAMPLED: 08:45

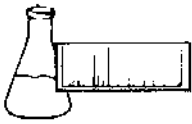
<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	ND ¹
Chlorobenzene	1.	ND
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	ND
Toluene	1.	ND
Xylenes	5.	ND
MTBE	1.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

Reviewed by Suzanne Hurdahl



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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Fairground Beverage
REPORT DATE: August 5, 1991 ANALYSIS DATE: July 29, 1991
SAMPLER: Don Tourangeau STATION: MW #1
DATE SAMPLED: July 19, 1991 REF.#: 21726
DATE RECEIVED: July 19, 1991 TIME SAMPLED: 10:12

<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	ND ¹
Chlorobenzene	1.	ND
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	32.1
Toluene	1.	ND
Xylenes	5.	46.4
MTBE	1.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 7

NOTES:

1 None detected

Reviewed by Suzanne Glendon



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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Fairground Beverage
REPORT DATE: August 5, 1991 ANALYSIS DATE: July 29, 1991
SAMPLER: Don Tourangeau STATION: MW #2
DATE SAMPLED: July 19, 1991 REF.#: 21727
DATE RECEIVED: July 19, 1991 TIME SAMPLED: 10:31

<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	ND ¹
Chlorobenzene	1.	ND
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	973.
Toluene	1.	TBQ ²
Xylenes	5.	2,040.
MTBE	1.	TBQ

NUMBER OF UNIDENTIFIED PEAKS FOUND: 5

NOTES:

- 1 None detected
- 2 Trace below quantitation limits

Reviewed by Suzanne Wendahl



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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Fairground Beverage
REPORT DATE: August 5, 1991 ANALYSIS DATE: July 29, 1991
SAMPLER: Don Tourangeau STATION: MW #3
DATE SAMPLED: July 19, 1991 REF.#: 21728
DATE RECEIVED: July 19, 1991 TIME SAMPLED: 10:50

<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	ND ¹
Chlorobenzene	1.	ND
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	3.39
Toluene	1.	ND
Xylenes	5.	ND
MTBE	1.	TBQ ²

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

- 1 None detected
- 2 Trace below quantitation limits

Reviewed by

Suzanne Tremblay



ENDYNE, INC.

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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Fairground Beverage
REPORT DATE: August 5, 1991 ANALYSIS DATE: July 29, 1991
SAMPLER: Don Tourangeau STATION: MW #4 *Duplicate of MW-3*
DATE SAMPLED: July 19, 1991 REF.#: 21729
DATE RECEIVED: July 19, 1991 TIME SAMPLED: Not indicated

<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	ND ¹
Chlorobenzene	1.	ND
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	3.75
Toluene	1.	ND
Xylenes	5.	ND
MTBE	1.	TBQ ²

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

- 1 None detected
- 2 Trace below quantitation limits

Reviewed by

Suzanne Donache



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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Fairground Beverage
REPORT DATE: August 5, 1991 ANALYSIS DATE: July 29, 1991
SAMPLER: Don Tourangeau STATION: Site Blank
DATE SAMPLED: July 19, 1991 REF.#: 21730
DATE RECEIVED: July 19, 1991 TIME SAMPLED: 11:00

<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	ND ¹
Chlorobenzene	1.	ND
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	ND
Toluene	1.	ND
Xylenes	5.	ND
MTBE	1.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

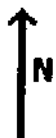
1 None detected

Reviewed by Suzanne Gendron

DATE: 7/19/91

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COMMENTS:



GROUNDWATER CONTOUR MAP

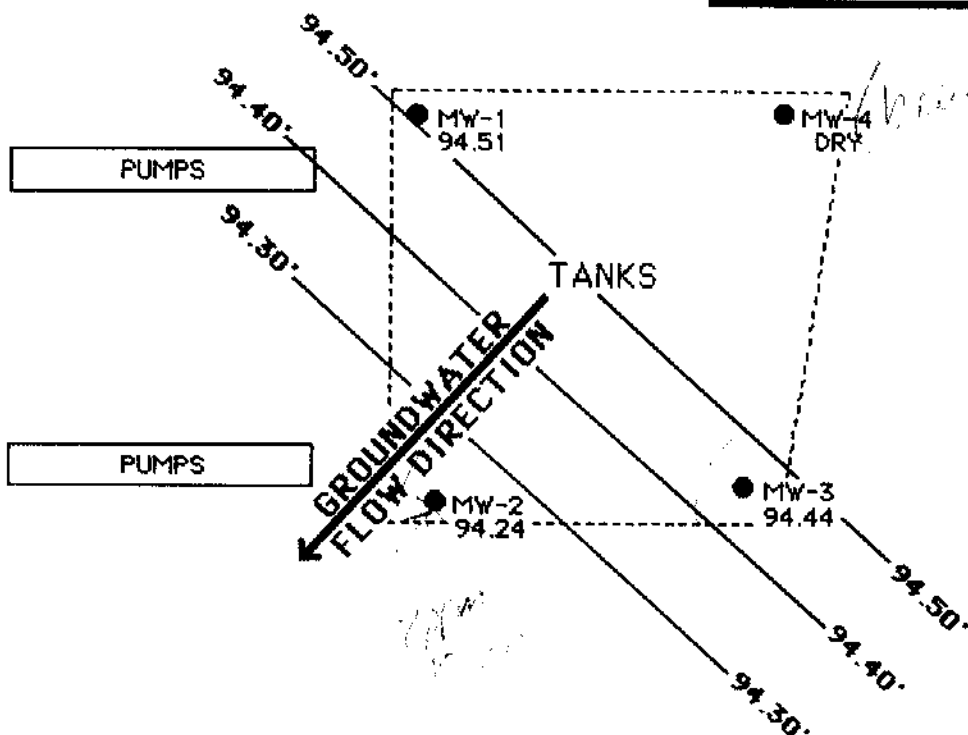
PROJECT : CHAMPLAIN OIL COMPANY
LOCATION : FAIRGROUNDS BEVERAGE
ESSEX JCT., VT
MONITORING DATE : 7/19/91

● MONITORING WELL

WELL IDENTIFICATION:
MW-1 - WELL I.D.
94.51 - WATER TABLE ELEVATION IN FEET



FAIRGROUNDS BEVERAGE



PEARL STREET